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(54) [Title of the Device] CLEANING BRUSH APPARATUS

Specification

1. Title of the Device

CLEANING BRUSH APPARATUS

2. Claim

A rotational brush apparatus being a cleaning brush having a brush body that is formed of a soft material and attached around a rotation shaft, comprising a cleaning mechanism for cleaning the brush body itself.

3. Detailed Description of the Device

(Field of Industrial Application)

The present device relates to a cleaning brush apparatus having a brush body that is formed of a soft material and attached around a rotation shaft, wherein the front end portion of the brush body is pressed for cleaning against a surface to be cleaned.

(Related Art)

A rotational cleaning brush is generally used as a cleaning device for aircrafts, automobiles, railway vehicles, and the like.

In general, this type of cleaning brush has a structure with a brush body formed of numerous thin string-shaped bodies or bristle bodies of a soft material, or formed of a soft-foaming-rubber sponge, the brush body being attached around the rotation shaft, wherein the front end portion of the brush body (brush body surface portion) is pressed for cleaning against a surface to be cleaned, while pouring cleaning liquid.

(Problems to be Solved by the Device)

Regarding a cleaning process by a cleaning brush with the above-described structure, it is considered that dirt and dusts on a surface to be cleaned come to gradually adhere to the surface portion of the brush body in contact with the surface to be cleaned, and contamination of the surface portion of the brush body develops through the cleaning process.

Such contamination of the surface portion of a brush body not only induces a drop in the cleaning effect but also causes scratches (fine scratches) on a surface to be cleaned.

Therefore, a conventional cleaning brush needs cleaning of the brush body itself, with frequent interruption of a cleaning task through a cleaning process, and accordingly, the cleaning task is inefficient and causes a significant factor of delay of the cleaning task and drop in operation efficiency.

The present device has been developed in such circumstances, and has an object to provide a cleaning brush apparatus capable of cleaning the surface portion of a brush body thereof simultaneously and continuously while performing a cleaning task without interrupting the cleaning task.

(Means for Solving the Problems)

In summary of the device for attaining the above-described object, there is provided a rotational brush apparatus being a cleaning brush having a brush body that is formed of a soft material and attaché around a rotation shaft, wherein the rotational brush apparatus is characterized by having a cleaning mechanism for cleaning the brush body itself.

(Operation)

In accordance with the present device with the above-

described constitution, a brush body is always maintained clean, because the brush body itself is cleaned at a place distant from a surface to be cleaned, during a cleaning task in which the surface portion of the brush body is pressed against the surface to be cleaned.

(Embodiments)

Embodiments in accordance with the present device will be described below, referring to the drawings.

In the figure, there are shown a central shaft 1, and a brush body attached around the central shaft 1 and formed of a soft material, wherein this brush body 2 is one for general use, such as numerous thin string-shaped bodies or bristle bodies, or a sponge body in a soft foaming rubber state.

A cleaning mechanism 3 cleans the surface portion 2a of the brush body 2, wherein the part 4 of the surface portion 2a in contact with a surface A to be cleaned is arranged at a distant place from the cleaning mechanism 3. The cleaning mechanism 3 can be variously embodied as shown in Fig. 1 to 3.

For example, as shown in Fig. 1, a cleaning water supply nozzle 5 is arranged, which is connected with an external cleaning water supply device (not shown) and facing a brush body 2, and dirt is removed by cleaning the surface portion 2a of the brush body 2 by jetting shower water from

the nozzle 5. In another embodiment, as shown in Fig. 2, a brush body 2 is formed of a sponge body in a soft foaming state, and a paired press rolls 6a and 6b with appropriate diameters are arranged close to each other, applying circumferential velocities v_a and v_b respectively to the rolls 6a and 6b with a relationship $v_a > v_{2a} > v_b$, wherein v_{2a} represent the circumferential velocity of the brush surface portion 2a. Thus, when the surface portion 2a of the brush body passes the area of the both rolls 6a and 6b, the sponge material is pressed and enlarged, and water spray is jetted from a cleaning water supply nozzle 5 arranged between the rolls 6a and 6b onto the brush body surface portion 2a to collide with it so that dirt on the brush body surface portion 2a is removed. Further, in another embodiment, as shown in Fig. 3, a brush body 2 is formed of a sponge body in a soft foaming state, and there is arranged a small patting brush 7 with implanted patting bodies 7b formed of numerous thin string-shaped bodies, soft rods or the like, wherein the small patting brush 7 is arranged such that the end portions of the patting bodies 7b collide with the brush body surface portion 2a, and a cleaning water supply nozzle 5 is arranged on the front side of the patting brush 7. When the brush body surface portion 2a passes the area of this patting brush 7, the brush body surface portion 2a is patted by patting bodies 7b and shower water is jetted from

the nozzle 5, thereby dirt on the brush body surface portion 2a being removed.

Further, in addition to the foregoing embodiments, the following embodiments are possible, for example. In an embodiment, shown in Fig. 4(a), a brush body 2 is formed of numerous thin string-shaped bodies or bristle bodies, and a colliding body 8 formed of a rod or the like is arranged parallel to the rotation shaft such that the brush body surface portion 2a collides with the colliding body 8 in the vicinity of a cleaning water supply nozzle 5. Still further, in another embodiment, shown in Fig. 4(b), a brush body 2 is formed of a sponge body in a soft foaming state, wherein an opening of a suction tube 9 connected with an external suction device is made in contact with a brush body surface portion 2a so as to suck and remove dusts.

(Advantages)

As has been described above, since a cleaning brush apparatus in accordance with the present device is provided with a cleaning mechanism for a cleaning brush to clean the brush body itself, it is possible to clean the surface portion of the brush body thereof simultaneously and continuously while performing a cleaning task without interrupting the cleaning task. Further, the brush body surface portion is always maintained clean, which prevents drop in cleaning efficiency and prevents generation of

scratches or the like on the surface to be cleaned, thereby excellent advantages are obtained.

4. Brief Description of the Drawings

[Fig. 1] A side view of a first embodiment of the present device.

[Fig. 2] A side view of a second embodiment.

[Fig. 3] A side view of a third embodiment.

[Fig. 4(a), (b)] Side views of other embodiments.

- 1 central shaft
- 2 brush body
- 3 cleaning mechanism

Fig. 1

- 1 central shaft
- 2 brush body
- 3 cleaning mechanism

⑨ 日本国特許庁 (J P)

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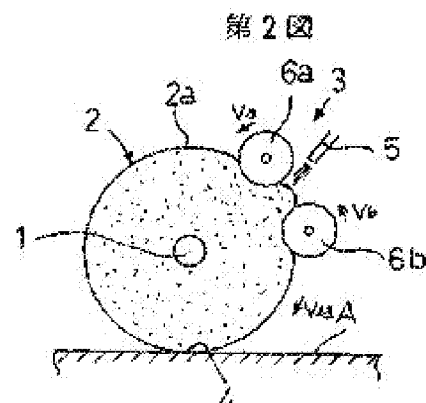
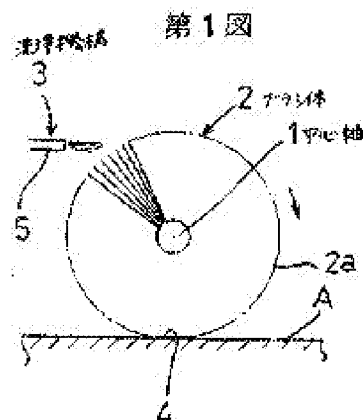
回転軸周りに柔軟材からなるブラシ体を装着してなる洗浄用ブラシにおいて、前記ブラシ体自身を洗浄する洗浄機構を設けたことを特徴とする回転ブラシ装置。

図面の簡単な説明

第1図はこの考案の第1の実施例の側面図、第

2図は第2の実施例の側面図、第3図は第3の実施例の側面図、第4図a, bは他の実施例の側面図である。

1……中心軸、2……ブラシ体、3……洗浄機構。



突開 昭 6 4 - 2 3 2 2 4 (2)

